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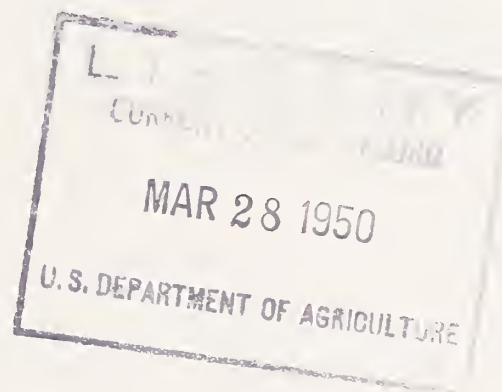


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# YEAST and QUICK BREAD

## RECIPES for the

# SCHOOL LUNCH



UNITED STATES DEPARTMENT OF AGRICULTURE

Washington, D.C.

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BUREAU OF HUMAN NUTRITION AND HOME ECONOMICS  
in cooperation with  
PRODUCTION AND MARKETING ADMINISTRATION  
U. S. Department of Agriculture  
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## YEAST AND QUICK BREAD RECIPES FOR THE SCHOOL LUNCH

Because bread holds a prominent place in the school lunch menu, it is important that the bread served be of high nutritive value. All the recipes in this publication produce breads that provide generous amounts of protein, calcium, thiamine, riboflavin, and food energy needed by growing, active children.

The recipes for breads and quick breads published here have been developed by the Bureau of Human Nutrition and Home Economics for the school lunch. The nutritive qualities and palatability of the breads have been built up by adding to the main ingredient--flour--certain special foods containing essential nutrients. All recipes contain milk and enriched flour. Some also use corn meal, whole-wheat flour, or potato flour combined with enriched white flour. Full-fat soy flour, wheat germ, or debittered dried brewers' yeast (an inactive powdered form of yeast) have been added in others to further fortify the bread nutritionally.

### Scheduling Time for Bread Making

These breads have been made by school lunch cooks in actual food service and each step in the bread-making process timed. Actual working time to make 12 loaves of bread averaged 1-1/2 hours. From 5 to 6 hours elapses between the time the bread-making process starts until the bread is finished. However, the cook can work on other jobs during the time when the dough is rising and baking. Morning preparation time for making bread can be shortened by about 15 minutes by weighing or measuring the dry ingredients the preceding day. It takes less time to weigh ingredients than to measure them. Some cooks may want to make bread one day to serve the next. Or they may want to use half the dough for rolls served the same day and bake the remainder in loaves to be served the following day.

### Cost and Equipment

The food and labor costs of the breads have been calculated. Using wholesale prices, the home-made breads are somewhat lower in cost than bought bread.

Bread can be made with very simple equipment. Hand or machine methods for mixing give equally successful results. A power mixer with a dough hook saves labor in making a very large quantity at one time. If loaf pans are not available several loaves may be baked in a larger pan. A hand tool called a "bench scraper" is recommended for cutting dough into loaves and removing dough from the work table. An insulated cabinet, commonly called a proof box, for holding the dough at controlled temperature and humidity is convenient but not required.

### Best Conditions for the Dough

Doughs containing yeast need to be held in a warm place (about 85° F.) so that the yeast can grow properly and make the bread "light." Cooler temperatures retard the growth of the yeast and delay the bread making. Higher temperatures speed up the growth of the yeast, but may cause the development of undesirable flavors. Fortunately the temperature and humidity of the school lunch kitchen are likely to be favorable for making bread by the straight dough or one-period method.

Consistency of the dough also influences the rising of the dough. Stiff dough rises more slowly than a softer one. Variations in flours result in slight differences in the consistency of the dough. For this reason a small part of the flour called for in yeast bread recipes is saved out at the first mixing and added only if the dough is too sticky.

### Formula for Home-made Type Bakery Bread

Some schools have arranged with commercial bakeries to make bread for their school lunch. A formula using nonfat dry milk, which produces a home-made type bread, is given below for this purpose. The formula expresses the weight of other ingredients in relation to the flour.

<u>Ingredients</u>	<u>Parts by weight</u>
Flour	100
Water (variable)	56 to 67
Yeast	4
Sugar	8
Salt	2.5
Fat	3
Nonfat dry milk	6 to 10

Formulas for other breads of high nutritive value, developed by the Bureau of Human Nutrition and Home Economics, and tested commercially, can be obtained from the Bureau (U. S. Department of Agriculture, Washington 25, D. C.).

100 portions	Ingredients	portions	Cost
4-1/2 ounces (8 cakes, 3/5 ounce each)	Compressed y east*		
3 cups	Lukewarm water		
1-1/2 quarts	Scalded milk		
About 7-1/4 pounds (about 7-1/4 quarts)	Sifted enriched flour		
9 ounces (1-1/8 cups)	Sugar		
3 ounces (1/3 cup)	Salt		
9 ounces (1-1/8 cups)	Fat		

Portion: 2 slices.

Yield: 12 1-pound  
loaves.

Cost per portion \_\_\_\_\_

\*2-1/4 ounces or 8 small  
packages active dry  
yeast may be used.

Total cost \_\_\_\_\_

1. Add crumbled yeast to lukewarm water in a 10-to 15-quart bowl. Stir after 10 minutes. Cool milk to lukewarm and add to yeast and water mixture.

To Mix by Hand

2. Blend dry ingredients, saving out 1 quart of flour. Melt fat. Place about two-thirds of the blended dry ingredients on top of yeast mixture. Mix slightly. Add melted fat and beat until smooth. Add the rest of the dry ingredients and mix well. If dough is very soft and sticky, gradually add enough saved-out flour to form a moderately soft dough.
3. Knead on a floured board until dough is smooth, satiny, and elastic.

To Mix by Machine

2. Blend dry ingredients, saving out 1 quart of the flour. Add blended ingredients with the unmelted fat to the yeast mixture.
3. Mix 15 to 20 minutes at low speed using dough hook, until dough is smooth, satiny, and elastic and leaves the sides of the bowl. If after 2 minutes of mixing the dough is very soft and sticky, gradually add enough saved-out flour to form a moderately soft dough.
4. Form dough into a smooth ball. Place in a greased bowl and turn to grease top.
5. Cover and let rise in a warm place (about 85° F.) until increased 2 to 3 times in volume (about 1-1/4 hours).
6. Punch down. Cut into 12 equal portions. Round each portion into a ball, cover, and let rest on table top for about 15 minutes.
7. Shape into loaves and place in lightly greased pans (3-1/2 by 9 inches or 4 by 8 inches)
8. Let rise in a warm place (about 85° F.) until increased 2 to 2-1/2 times in volume. (about 1-1/2 hours).
9. Bake 35 to 40 minutes in a moderately hot oven (400° F.). A small pan of water placed in the oven gives a tender crust.







100 portions	Ingredients	portions	Cost
4-1/2 ounces (8 cakes, 3/5 ounce each)	Compressed yeast*		
2-1/4 quarts	Lukewarm water		
About 7 pounds (About 7 quarts)	Sifted enriched flour		
12 ounces (3 cups)	Nonfat dry milk		
9 ounces (1-1/8 cups)	Sugar		
3 ounces (1/3 cup)	Salt		
9 ounces (1-1/8 cups)	Fat		

Portion: 2 slices.  
Yield: 12 1-pound  
loaves.

Cost per portion \_\_\_\_\_

\*2-1/4 ounces or 8 small  
packages active dry yeast  
may be used.

Total Cost \_\_\_\_\_

1. Add crumbled yeast to lukewarm water in a 10- to 15-quart bowl. Stir after 10 minutes.

#### To Mix by Hand

2. Blend dry ingredients, saving out 1 quart of flour. Melt fat. Place about two-thirds of the blended dry ingredients on top of yeast mixture. Mix slightly. Add melted fat and beat until smooth. Add the rest of the dry ingredients and mix well. If dough is very soft and sticky, gradually add enough saved-out flour to form a moderately soft dough.
3. Knead on a floured board until dough is smooth, satiny, and elastic.

#### To Mix by Machine

2. Blend dry ingredients, saving out 1 quart of the flour. Add blended ingredients with the unmelted fat to the yeast mixture.
3. Mix 15 to 20 minutes at low speed, using dough hook, until dough is smooth, satiny, and elastic and leaves the sides of the bowl. If after 2 minutes of mixing the dough is very soft and sticky, gradually add enough saved-out flour to form a moderately soft dough.
4. Form dough into a smooth ball. Place in a greased bowl and turn to grease top.
5. Cover and let rise in a warm place (about 85° F.) until increased 2 to 3 times in volume (about 1-1/4 hours).
6. Punch down. Cut into 12 equal portions. Round each portion into a ball, cover, and let rest on table top for about 15 minutes.
7. Shape into loaves and place in lightly greased pans (3-1/2 by 9 inches or 4 by 8 inches).
8. Let rise in a warm place (about 85° F.) until increased 2 to 2-1/2 times in volume (about 1-1/2 hours).
9. Bake 35 to 40 minutes in a moderately hot oven (400° F.). A small pan of water placed in the oven gives a tender crust.



## WHITE BREAD (With Evaporated Milk)

Breads

100 portions	Ingredients	— portions	Cost
4-1/2 ounces (8 cakes, 3/5 ounce each)	Compressed yeast*		
4-2/3 cups	Lukewarm water		
4-2/3 cups	Evaporated milk		
About 7-1/4 pounds (about 7-1/4 quarts)	Sifted enriched flour		
9 ounces (1-1/8 cups)	Sugar		
3 ounces (1/3 cups)	Salt		
9 ounces (1-1/8 cups)	Fat		

Portion: 2 slices.  
Yield: 12 1-pound loaves.

Cost per portion \_\_\_\_\_

\* 2-1/4 ounces or 8 small packages active dry yeast may be used.

Total cost \_\_\_\_\_

1. Add crumbled yeast to lukewarm water in a 10- to 15-quart bowl. Stir after 10 minutes. Add evaporated milk.

To Mix by Hand

2. Blend dry ingredients, saving out 1 quart of flour. Melt fat. Place about two-thirds of the blended dry ingredients on top of yeast mixture. Mix slightly. Add melted fat and beat until smooth. Add the rest of the dry ingredients and mix well. If dough is very soft and sticky, gradually add enough saved-out flour to form a moderately soft dough.

3. Knead on a floured board until dough is smooth, satiny, and elastic.

4. Form dough into a smooth ball. Place in a greased bowl and turn to grease top.

5. Cover and let rise in a warm place (about 85° F.) until increased 2 to 3 times in volume (about 1-1/4 hours).

6. Punch down. Cut into 12 equal portions. Round each portion into a ball, cover, and let rest on table top for about 15 minutes.

7. Shape into loaves and place in lightly greased pans (3-1/2 by 9 inches or 4 by 8 inches).

8. Let rise in a warm place (about 85° F.) until increased 2 to 2-1/2 times in volume (about 1-1/2 hours).

9. Bake 35 to 40 minutes in a moderately hot oven (400° F.). A small pan of water placed in the oven gives a tender crust.

To Mix by Machine

2. Blend dry ingredients, saving out 1 quart of the flour. Add blended ingredients with the unmelted fat to the yeast mixture.

3. Mix 15 to 20 minutes at low speed, using dough hook, until dough is smooth, satiny, and elastic and leaves the sides of the bowl. If after 2 minutes of mixing the dough is very soft and sticky, gradually add enough saved-out flour to form a moderately soft dough.

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100 portions	Ingredients	portions	Cost
$4\frac{1}{2}$ ounces (8 cakes, $\frac{3}{5}$ ounce each)	Compressed yeast*		
2- $\frac{1}{4}$ quarts	Lukewarm water		
About 7 pounds (about 7 quarts)	Sifted enriched flour		
7 ounces (1- $\frac{1}{8}$ cups)	Potato flour		
7 ounces (1- $\frac{3}{4}$ cups)	Nonfat dry milk		
9 ounces (1- $\frac{1}{8}$ cups)	Sugar		
3 ounces ( $\frac{1}{3}$ cup)	Salt		
9 ounces (1- $\frac{1}{8}$ cups)	Fat		

Portion: 2 slices.  
Yield: 12 1-pound loaves.

Cost per portion \_\_\_\_\_

\* 2- $\frac{1}{4}$  ounces or .8 small packages active dry yeast may be used.

Total Cost \_\_\_\_\_

1. Add crumbled yeast to lukewarm water in a 10- to 15-quart bowl. Stir after 10 minutes.

To Mix by Hand

2. Sift dry ingredients together, saving out 1 quart of wheat flour. Melt fat. Place about two-thirds of the blended dry ingredients on top of yeast mixture. Mix slightly. Add melted fat and beat until smooth. Add the rest of the dry ingredients and mix well. If dough is very soft and sticky, gradually add enough saved-out flour to form a moderately soft dough.
3. Knead on a floured board until dough is smooth, satiny, and elastic.
4. Form dough into a smooth ball. Place in a greased bowl and turn to grease top.
5. Cover and let rise in a warm place (about 85° F.) until increased 2 to 3 times in volume (about 1- $\frac{1}{4}$  hours).
6. Punch down. Cut into 12 equal portions. Round each portion into a ball, cover, and let rest on table top for about 15 minutes.
7. Shape into loaves and place in lightly greased pans (3- $\frac{1}{2}$  by 9 inches or 4 by 8 inches).
8. Let rise in a warm place (about 85° F.) until increased 2 to 2- $\frac{1}{2}$  times in volume (about 1- $\frac{1}{2}$  hours).
9. Bake 35 to 40 minutes in a moderately hot oven (400° F.). A small pan of water placed in the oven gives a tender crust.

To Mix by Machine

2. Sift dry ingredients together, saving out 1 quart of the wheat flour. Add blended ingredients with the unmelted fat to the yeast mixture.
3. Mix 15 to 20 minutes at low speed, using dough hook, until dough is smooth, satiny, and elastic and leaves the sides of the bowl. If after 2 minutes of mixing the dough is very soft and sticky, gradually add enough saved-out flour to form a moderately soft dough.



100 portions	Ingredients	portions	Cost
5-1/2 ounces (9 cakes, 3/5 ounce each)	Compressed yeast*		
2-1/4 quarts	Lukewarm water		
About 7-3/4 pounds (About 7-3/4 quarts)	Sifted enriched flour		
2-1/2 ounces (1/2 cup)	Debittered dried brewers' yeast		
7 ounces (1-3/4 cups)	Nonfat dry milk		
9 ounces (1-1/8 cups)	Sugar		
3 ounces (1/3 cup)	Salt		
9 ounces (1-1/8 cups)	Fat		

Portion: 2 slices.  
Yield: 12 1-pound loaves.

Cost per portion \_\_\_\_\_

\* 2-3/4 ounces or 9 small  
packages active dry yeast  
may be used.

Total Cost \_\_\_\_\_

1. Add crumbled yeast to lukewarm water in a 10- to 15-quart bowl. Stir after 10 minutes.

To Mix by Hand

2. Sift dry ingredients together, saving out 1 quart of flour. Melt fat. Place about two-thirds of the blended dry ingredients on top of yeast mixture. Mix slightly. Add melted fat and beat until smooth. Add the rest of the dry ingredients and mix well. If dough is very soft and sticky, gradually add enough saved-out flour to form a moderately soft dough.

3. Knead on a floured board until dough is smooth, satiny, and elastic.

4. Form dough into a smooth ball. Place in a greased bowl and turn to grease top.

5. Cover and let rise in a warm place (about 85° F.) until increased 2 to 3 times in volume (about 1-1/4 hours).

6. Punch down. Cut into 12 equal portions. Round each portion into a ball, cover, and let rest on table top for about 15 minutes.

7. Shape into loaves and place in lightly greased pans (3-1/2 by 9 inches or 4 by 8 inches).

8. Let rise in a warm place (about 85° F.) until increased 2 to 2-1/2 times in volume (about 1-1/2 hours).

9. Bake 35 to 40 minutes in a moderately hot oven (400° F.). A small pan of water placed in the oven gives a tender crust.

To Mix by Machine

2. Sift dry ingredients together, saving out 1 quart of flour. Add blended ingredients with the unmelted fat to the yeast mixture.

3. Mix 15 to 20 minutes at low speed, using dough hook, until dough is smooth, satiny, and elastic and leaves the sides of the bowl. If after 2 minutes of mixing the dough is very soft and sticky, gradually add enough saved-out flour to form a moderately soft dough.





## WHOLE-WHEAT BREAD

Breads

100 portions	Ingredients	portions	Cost
1-1/2 ounces (8 cakes, 3/5 ounce each)	Compressed yeast*		
2-1/4 quarts	Lukewarm water		
About 3-1/2 pounds (About 3-1/2 quarts)	Sifted enriched flour		
3-1/2 pounds (3-1/4 quarts)	Whole-wheat flour		
7 ounces (1-3/4 cups)	Nonfat dry milk		
7 ounces (7/8 cup)	Sugar		
3 ounces (1/3 cup)	Salt		
7 ounces (7/8 cup)	Fat		

Portion: 2 slices.  
Yield: 12 1-pound loaves.

Cost per portion \_\_\_\_\_

\*2-1/4 ounces or 8 small  
packages active dry yeast  
may be used.

Total cost \_\_\_\_\_

1. Add crumbled yeast to lukewarm water in a 10- to 15-quart bowl. Stir after 10 minutes.

To Mix by HandTo Mix by Machine

2. Blend dry ingredients, saving out 1 quart of white flour. Melt fat. Place about two-thirds of the blended dry ingredients on top of yeast mixture. Mix slightly. Add melted fat and beat until smooth. Add the rest of the dry ingredients and mix well. If dough is very soft and sticky, gradually add enough saved-out flour to form a moderately soft dough.
2. Blend dry ingredients, saving out 1 quart of the white flour. Add blended ingredients with the unmelted fat to the yeast mixture.
3. Knead on a floured board until dough is smooth, satiny, and elastic.
3. Mix 15 to 20 minutes at low speed, using dough hook, until dough is smooth, satiny, and elastic and leaves the sides of the bowl. If after 2 minutes of mixing the dough is very soft and sticky, gradually add enough saved-out flour to form a moderately soft dough.
4. Form dough into a smooth ball. Place in a greased bowl and turn to grease top.
5. Cover and let rise in a warm place (about 85° F.) until increased 2 to 3 times in volume (about 1-1/4 hours).
6. Punch down. Cut into 12 equal portions. Round each portion into a ball, cover, and let rest on table top for about 15 minutes.
7. Shape into loaves and place in lightly greased pans (3-1/2 by 9 inches or 4 by 8 inches).
8. Let rise in a warm place (about 85° F.) until increased 2 to 2-1/2 times in volume (about 1-1/2 hours).
9. Bake 35 to 40 minutes in a moderately hot oven (400° F.). A small pan of water placed in the oven gives a tender crust.

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100 portions	Ingredients	portions	Cost
4-1/2 ounces (8 cakes, 3/5 ounce each)	Compressed yeast*		
2-1/4 quarts	Lukewarm water		
About 7 pounds (about 7 quarts)	Sifted enriched flour		
5 ounces (2-1/4 cups)	Sifted full-fat soy flour		
7 ounces (1-3/4 cups)	Nonfat dry milk		
9 ounces (1-1/8 cups)	Sugar		
3 ounces (1/3 cup)	Salt		
9 ounces (1-1/8 cups)	Fat		

Portion: 2 slices.  
Yield: 12 1-pound loaves.

Cost per portion \_\_\_\_\_

\*2-1/4 ounces or 8 small  
packages active dry yeast  
may be used.

Total cost \_\_\_\_\_

1. Add crumbled yeast to lukewarm water in a 10- to 15-quart bowl. Stir after 10 minutes.

To Mix by Hand

To Mix by Machine

2. Sift dry ingredients, saving out 1 quart of wheat flour. Melt fat. Place about two-thirds of the blended dry ingredients on top of yeast mixture. Mix slightly. Add melted fat and beat until smooth. Add the rest of the dry ingredients and mix well. If dough is very soft and sticky, gradually add enough saved-out flour to form a moderately soft dough.
2. Sift dry ingredients, saving out 1 quart of the wheat flour. Add blended ingredients with the unmelted fat to the yeast mixture.
3. Knead on a floured board until dough is smooth, satiny, and elastic.
3. Mix 15 to 20 minutes at low speed using dough hook until dough is smooth, satiny, and elastic and leaves the sides of the bowl. If after 2 minutes of mixing the dough is very soft and sticky, gradually add enough saved-out flour to form a moderately soft dough.
4. Form dough into a smooth ball. Place in a greased bowl and turn to grease top.
5. Cover and let rise in a warm place (about 85° F.) until increased 2 to 3 times in volume (about 1-1/4 hours).
6. Punch down. Cut into 12 equal portions. Round each portion into a ball, cover, and let rest on table top for about 15 minutes.
7. Shape into loaves and place in lightly greased pans (3-1/2 by 9 inches or 4 by 8 inches).
8. Let rise in a warm place (about 85° F.) until increased 2 to 2-1/2 times in volume (about 1-1/2 hours).
9. Bake 35 to 40 minutes in a moderately hot oven (400° F.). A small pan of water placed in the oven gives a tender crust.

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100 portions	Ingredients	portions	Cost
4-1/2 ounces (8 cakes, 3/5 ounce each)	Compressed yeast*		
2-1/4 quarts	Lukewarm water		
About 7 pounds (about 7 quarts)	Sifted enriched flour		
3-1/2 ounces (1-1/2 cups)	Sifted full-fat soy flour		
3-1/2 ounces (3/4 cup)	Wheat germ		
7 ounces (1-3/4 cups)	Nonfat dry milk		
9 ounces (1-1/8 cups)	Sugar		
3 ounces (1/3 cup)	Salt		
7 ounces (7/8 cup)	Fat		

Portion: 2 slices.  
Yield: 12 1-pound loaves.

Cost per portion \_\_\_\_\_

\*2-1/4 ounces or 8 small packages active dry yeast may be used.

Total cost \_\_\_\_\_

1. Add crumbled yeast to lukewarm water in a 10- to 15-quart bowl. Stir after 10 minutes.

To Mix by Hand

To Mix by Machine

2. Blend dry ingredients, saving out 1 quart of wheat flour. Melt fat. Place about two-thirds of the blended dry ingredients on top of yeast mixture. Mix slightly. Add melted fat and beat until smooth. Add the rest of the dry ingredients and mix well. If dough is very soft and sticky, gradually add enough saved-out flour to form a moderately soft dough.
3. Knead on a floured board until dough is smooth, satiny, and elastic.
4. Form dough into a smooth ball. Place in a greased bowl and turn to grease top.
5. Cover and let rise in a warm place (about 85° F.) until increased 2 to 3 times in volume (about 1-1/4 hours).
6. Punch down. Cut into 12 equal portions. Round each portion into a ball, cover, and let rest on table top for about 15 minutes.
7. Shape into loaves and place in lightly greased pans (3-1/2 by 9 inches or 4 by 8 inches).
8. Let rise in a warm place (about 85° F.) until increased 2 to 2-1/2 times in volume (about 1-1/2 hours).
9. Bake 35 to 40 minutes in a moderately hot oven (400° F.). A small pan of water placed in the oven gives a tender crust.



## RAISIN BREAD (Using Bread Recipe)

Breads

For 100 portions use recipe for 1 12-loaf batch of any of the bread recipes.  
Double the quantity of yeast in the recipe.  
Use 3-1/3 pounds (2-1/2 quarts) seedless raisins.

Portion: 2 slices.

Yield: 12 1-1/4-pound loaves.

Total cost: \_\_\_\_\_

Cost per portion: \_\_\_\_\_

1. Wash and drain raisins. If the fruit is hard, soak in warm water until soft; drain and dry.
2. Follow directions for mixing the bread, adding the raisins during mixing as follows:

### To Mix by Hand

Mix raisins into dough just before kneading. (Between steps 2 and 3).

### To Mix by Machine

Add raisins as soon as dough leaves sides of the bowl and continue mixing for 1 to 2 minutes until well distributed. (Step 3).

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## ROLLS (Using Bread Recipe)

Breads

For 100 portions use recipe for 1 12-loaf batch of any of the bread recipes.

Portion: 2 rolls, 1 ounce each.

Yield: 200 rolls.

1. Follow directions given in the bread recipe until after first rising in step 5.
2. Punch down dough. Cut and shape or "pinch off" 200 small rolls (about 1 ounce, or 1-1/4 inches in diameter). Place on two lightly greased sheet pans (15 by 24 inches). Grease tops lightly, if desired.
3. Let rise at about 85° F. until increased 2 to 2-1/2 times in volume (about 1 hour).
4. Bake in a hot oven (425° F.) for 35 to 40 minutes.

Note: If less bread is needed, half of the dough may be baked in rolls for immediate use and half in loaves to serve the following day.

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## CHEESE ROLLS (Refrigerated)

Breads

100 portions	Ingredients	--portions	Cost
2 cups	Milk		
4 ounces (1/2 cup)	Fat		
6 ounces (3/4 cup)	Sugar		
2-1/3 tablespoons	Salt		
2 ounces (3 cakes, 3/5 ounce each)	Compressed yeast*		
1-3/4 cups	Lukewarm water		
About 3 pounds (about 3 quarts)	Sifted enriched flour		
1 pound	Cheese, finely grated		

Portion: 1 roll.  
Yield: 100 1-ounce rolls.

Cost per portion \_\_\_\_\_

\*1 ounce or 3 small packages  
active dry yeast may be used.

Total cost \_\_\_\_\_

1. Scald milk and blend in fat. Add sugar and salt. Cool to lukewarm.
2. Add crumbled yeast to lukewarm water in an 8- to 10-quart bowl. Stir after 10 minutes.  
Add milk mixture.

To Mix by HandTo Mix by Machine

3. Mix in half of the flour; beat until smooth. Add remaining flour to form a soft dough. Blend in cheese. Knead on floured board until dough is smooth and elastic.
3. Add flour, saving out 2 cups. Mix on low speed 10 to 15 minutes, using dough hook, until dough is smooth and elastic. If after 2 minutes of mixing the dough is still sticky, add enough of the saved-out flour to form a soft dough. Blend in cheese the last minute of mixing.
4. Form dough into a smooth ball. Place in a greased bowl and turn to grease top.
5. Cover and let rise in a warm place (about 85° F.) for 1 hour.
6. Cover and refrigerate overnight.
7. The next morning, cut dough into 4 equal portions. Form each portion into a ball, cover, and let rest on table top until soft enough to handle (about 1/2 hour).
8. Shape dough into 100 small rolls (1 ounce, or 1-1/4 inches in diameter). Place on lightly greased sheet pan (15 by 24 inches).
9. Let rise in a warm place (about 85° F.) until increased 2 to 2-1/2 times in volume (about 1 hour).
10. Bake 30 to 35 minutes in a moderately hot oven (400° F.)

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## CORN MEAL ROLLS (Refrigerated)

Breads

100 portions	Ingredients	portions	Cost
8 ounces (1-1/2 cups)	Yellow corn meal		
3-1/4 cups	Water for cooking corn meal		
2 ounces (3 cakes, 3/5 ounce each)	Compressed yeast*		
1-1/2 cups	Lukewarm water		
About 3 pounds (about 3 quarts)	Sifted enriched flour		
6 ounces (1-1/2 cups)	Nonfat dry milk		
5 ounces (5/8 cup)	Sugar		
1-1/2 ounces (3 tablespoons)	Salt		
6 ounces (3/4 cup)	Fat		

Portion: 2 slices.  
Yield: 100 1-ounce rolls.

Cost per portion \_\_\_\_\_

\*1 ounce or 3 small packages active dry yeast may be used.

Total cost \_\_\_\_\_

1. Combine corn meal and water. Cook until thickened. Cool to lukewarm.
2. Add crumbled yeast to lukewarm water in an 8- to 10-quart bowl. Stir after 10 minutes. Blend in compressed mixture.

To Mix by HandTo Mix by Machine

3. Blend remaining dry ingredients saving out 2 cups of the flour. Melt fat. Place about two-thirds of the blended dry ingredients on top of yeast mixture. Mix slightly. Add melted fat and beat until smooth. Add remaining dry ingredients, except saved-out flour, and mix well. If dough is very sticky, gradually add enough saved-out flour to form a soft dough.
4. Knead on floured board until dough is smooth and elastic.
5. Form dough into a smooth ball. Place in a lightly greased bowl and turn to grease top.
6. Cover and let rise in a warm place (about 85° F.) about 1 hour.
7. Cover and refrigerate overnight.
8. The next morning, cut dough into 4 equal portions. Form each portion into a ball, cover and let rest on table top until soft enough to handle (about 1/2 hour).
9. Shape dough into 100 small rolls (1 ounce, or 1-1/4 inches in diameter). Place on a lightly greased sheet pan (15 by 24 inches).
10. Let rise in a warm place (about 85° F.) until increased 2 to 2-1/2 times in volume (about 1 hour).
11. Bake 20 to 25 minutes in a moderate oven (375° F.).

BUREAU OF HUMAN NUTRITION AND HOME ECONOMICS





100 portions	Ingredients	portions	Cost
2-1/4 ounces (4 cakes, 3/5 ounce each)	Compressed yeast*		
3-3/4 cups	Lukewarm water		
1 cup	Molasses		
About 2 pounds (about 2 quarts)	Sifted enriched flour		
1 pound 6 ounces (1-1/4 quarts)	Whole-wheat flour		
6 ounces (1-1/2 cups)	Nonfat dry milk		
1-1/4 ounces (2-1/2 table-spoons)	Salt		
4 ounces (1/2 cup)	Fat		

Portion: 1 roll.  
Yield: 100 1-ounce rolls.

Cost per portion \_\_\_\_\_

\*1-1/8 ounces or 4 small packages active dry yeast may be used.

Total cost \_\_\_\_\_

1. Add crumbled yeast to lukewarm water in an 8- to 10-quart bowl. Stir after 10 minutes. Mix in molasses.

#### To Mix by Hand

2. Blend dry ingredients, saving out 2 cups of the white flour. Melt fat. Place about two-thirds of the blended dry ingredients on top of yeast mixture. Mix slightly. Add melted fat and beat until smooth. Add remaining dry ingredients except saved-out flour and mix well. If the dough is very soft and sticky gradually add enough saved-out flour to form a moderately soft dough.

3. Knead on floured board until dough is smooth and elastic.

4. Form dough into a smooth ball. Place in a greased bowl and turn to grease top.

5. Cover and let rise in a warm place (about 85° F.) about 1 hour.

6. Cover and refrigerate overnight.

7. The next morning, cut dough into 4 equal portions. Form each portion into a ball, cover and let rest on table top until soft enough to handle (about 1/2 hour).

8. Shape dough into 100 small rolls (1 ounce, or 1-1/4 inches in diameter). Place on a lightly greased sheet pan (15 by 24 inches).

9. Let rise in a warm place (about 85° F.) until increased 2 to 2-1/2 times in volume (about 1-1/2 hours).

10. Bake about 20 minutes in moderately hot oven (400° F.)

#### To Mix by Machine

2. Blend dry ingredients, saving out 2 cups of the white flour. Add blended ingredients with the unmelted fat to the yeast mixture.

3. Mix 10 to 15 minutes at low speed, using the dough hook, until dough is smooth and elastic and leaves the sides of the bowl. If after the first 2 minutes the dough is very soft and sticky, gradually add enough saved-out flour to form a moderately soft dough.



## BOSTON BROWN BREAD

## Breads

100 portions	Ingredients	portions	Cost
2-3/4 pounds (2-1/2 quarts)	Whole-wheat flour		
12 ounces (2-1/4 cups)	Corn meal		
5 tablespoons	Baking powder		
4 teaspoons	Soda		
2 tablespoons	Salt		
3-1/2 cups	Molasses		
8 ounces (1 cup)	Fat, melted		
2-1/4 quarts	Buttermilk or sour milk*		
1 pound (3/4 quart)	Seedless raisins, lightly floured		

Portion: 1/2 slice.

Total cost \_\_\_\_\_

Cost per portion \_\_\_\_\_

BUREAU OF HUMAN NUTRITION AND HOME ECONOMICS

1. Blend dry ingredients.
2. Add molasses and melted fat, stirring until well mixed. Gradually stir in sour milk. Mix in lightly floured raisins the last few minutes of mixing.
3. Pour into 10 well-greased 1-pound coffee cans or five well-greased loaf pans (4 by 8 inches).
4. Cover and steam in compartment steamer at 6 to 7 pounds pressure for 2-1/2 hours, or boil in a hot-water bath for 3-1/2 hours.

\*8 ounces (2 cups) nonfat dry milk reconstituted with 2 quarts water and soured by adding 1/2 cup vinegar may be used.

## CHEESE BISCUIT

## Breads

100 portions	Ingredients	portions	Cost
3-1/2 pounds (3-1/2 quarts)	Sifted enriched flour		
3 ounces (1/2 cup)	Baking powder		
2 tablespoons	Salt		
1 pound (2 cups)	Fat		
1-1/4 pounds	Cheese, grated		
About 3-3/4 cups	Milk		

Portion: 1 2-inch biscuit

Total cost \_\_\_\_\_

Cost per portion \_\_\_\_\_

BUREAU OF HUMAN NUTRITION AND HOME ECONOMICS

1. Stir dry ingredients together and sift.
2. Rub or cut in fat and cheese.
3. Add enough milk to make a soft dough.
4. Turn out on a lightly floured board, divide in half, and knead lightly about 1 minute.
5. Roll dough to 1/2-inch thickness and cut with a floured 2-inch cutter, or roll out in sheet and cut in 2-inch squares. Place on ungreased baking sheets.
6. Bake in a hot oven (425° F.) 15 to 20 minutes.





## CORN MEAL BISCUIT (With Nonfat Dry Milk)

Breads

100 portions	Ingredients	portions	Cost
3 pounds (3 quarts)	Sifted en- riched flour		
1 pound (3 cups)	Yellow corn meal		
12 ounces (3 cups)	Nonfat dry milk		
3 ounces (1/2 cup)	Baking powder		
2-1/2 table- spoons	Salt		
1-1/2 pounds (3 cups)	Fat		
About 3-1/2 cups	Water		

Portion: 1 2-inch biscuit. Total cost \_\_\_\_\_

Cost per portion \_\_\_\_\_

1. Stir dry ingredients together and sift. (Or blend 15 minutes in mixer on low speed, using the whip)
2. Cut or rub in fat.
3. Add water to make a moderately soft dough.
4. Turn dough out on a lightly floured board, divide into halves, and knead lightly about 1 minute.
5. Roll out to 1/2-inch thickness and cut with a floured 2-inch cutter, or roll out in sheet and cut into 2-inch squares. Place on ungreased baking sheets.
6. Bake in a moderately hot oven (400° F.) about 20 minutes.

## BUREAU OF HUMAN NUTRITION AND HOME ECONOMICS

## OATMEAL BREAD (With Nonfat Dry Milk and Dried Whole Egg)

Breads

100 portions	Ingredients	portions	Cost
3 quarts	Hot water		
1 pound (1-1/2 quarts)	Oatmeal		
2 pounds (1-1/2 quarts)	Seedless raisins		
3-1/2 pounds (3-1/2 quarts)	Sifted enrich- ed flour		
1-1/4 pounds (2-1/2 cups)	Sugar		
3/4 pound (3 cups)	Nonfat dry milk		
3/4 pound (3 cups firm-packed)	Dried whole egg		
6 ounces (1 cup)	Baking powder		
3 ounces (1/3 cup)	Salt		
1 pound (2 cups)	Fat		
1 pound	Nuts, coarse- ly chopped		

Portion: 2 slices. Total cost \_\_\_\_\_

Cost per portion \_\_\_\_\_

1. Add hot water to oatmeal and raisins. Soak about 30 minutes.
2. Stir remaining dry ingredients together and sift. (Or blend 15 minutes in mixer on low speed, using the whip).
3. Cut or rub in fat to the consistency of coarse corn meal.
4. Add oatmeal-raisin mixture. Beat in mixer for about 2 minutes on low speed or stir until smooth. Mix in nuts the last few seconds.
5. Fill eight greased loaf pans (4 by 8 inches) two-thirds full.
6. Bake in a moderate oven (350° F.) for 1 hour.

## BUREAU OF HUMAN NUTRITION AND HOME ECONOMICS





# PEANUT BUTTER CORN MEAL MUFFINS (With Dried Whole Egg)

Breads

100 portions	Ingredients	portions	Cost
1/2 pound (1 cup)	Fat		
2 pounds (1 quart)	Peanut butter		
10 ounces (1-1/4 cups)	Sugar		
1 pound* (1 quart)	Sifted en- riched flour		
4 pounds (3 quarts)	Corn meal		
6 ounces (1-1/2 cups firm- packed)	Dried whole egg		
4 ounces (2/3 cup)	Baking powder		
3-1/2 table- spoons	Salt		
About 1-3/4 quarts	Milk*		

1. Cream together fat, peanut butter, and sugar.
2. Stir dry ingredients together and sift. (Or blend 15 minutes in mixer on low speed, using the whip.)
3. Blend dry ingredients with creamed mixture to the consistency of fine crumbs.
4. Add milk. Stir only until dry ingredients are moist and the mixture has a rough appearance.
5. Use No. 20 scoop (about 3-1/4 tablespoons) to measure batter into greased muffin pans.
6. Bake in hot oven (425° F.) for about 15 minutes.

Portion: 1 muffin.

Total cost \_\_\_\_\_

Cost per portion \_\_\_\_\_

\*7 ounces (1-3/4 cups) nonfat dry milk and 1-3/4 quarts water may be used.

## BUREAU OF HUMAN NUTRITION AND HOME ECONOMICS

# PEANUT BUTTER MUFFINS (With Nonfat Dry Milk and Dried Whole Egg)

Breads

100 portions	Ingredients	-- portions	Cost
3 pounds (3 quarts)	Sifted en- riched flour		
3/4 pound (1-1/2 cups)	Sugar		
3 ounces (1/2 cup)	Baking powder		
3 tablespoons	Salt		
3 ounces (3/4 cup firm-packed)	Dried whole egg		
5 ounces (1-1/4 cups)	Nonfat dry milk		
2-1/4 pounds (4-1/2 cups)	Peanut butter		
About 1 quart	Water		
8 ounces (1 cup)	Fat, melted		

1. Stir dry ingredients together and sift. (Or blend 15 minutes in mixer on low speed, using the whip).
2. Cut in peanut butter to consistency of coarse corn meal.
3. Add water and melted fat. Stir only until dry ingredients are moist and the mixture has a rough appearance.
4. Use No. 24 scoop (about 3 tablespoons) to measure batter into greased muffin pans.
5. Bake in moderately hot oven (400° F.) for about 15 minutes.

Portion: 1 muffin.

Total cost \_\_\_\_\_

Cost per portion \_\_\_\_\_

## BUREAU OF HUMAN NUTRITION AND HOME ECONOMICS



RAISIN SOY MUFFINS (With Nonfat Dry Milk and Dried Whole Egg)

Breads

100 portions	Ingredients	portions	Cost
3 pounds (3 quarts)	Sifted enriched flour		
6 ounces (2-2/3 cups)	Sifted full-fat soy flour		
6 ounces (1-1/2 cups)	Nonfat dry milk		
1/4 ounces (2/3 cup)	Baking powder		
2 tablespoons	Salt		
8 ounces (1 cup)	Sugar		
3 ounces (3/4 cup firm-packed)	Dried whole egg		
About 1-1/2 quarts	Water		
8 ounces (1 cup)	Fat, melted		
1-1/4 pounds (1 quart)	Seedless raisins		

Portion: 1 muffin.

Total cost \_\_\_\_\_

Cost per portion \_\_\_\_\_

BUREAU OF HUMAN NUTRITION AND HOME ECONOMICS

1. Stir dry ingredients together and sift. (Or blend 15 minutes in mixer on low speed, using the whip.)
2. Add water, fat, and raisins to dry ingredients. Stir only until dry ingredients are moistened and the mixture has a rough appearance.
3. Use No. 24 scoop (about 3 tablespoons) to measure batter into greased muffin pans.
4. Bake in a moderately hot oven (400° F.) for 15 minutes.

SOY BISCUIT (With Nonfat Dry Milk)

Breads

100 portions	Ingredients	portions	Cost
3-3/4 pounds (3-3/4 quarts)	Sifted enriched flour		
6 ounces (2-2/3 cups)	Sifted full-fat soy flour		
3/4 pound (3 cups)	Nonfat dry milk		
3 ounces (1/2 cup)	Baking powder		
2 tablespoons	Salt		
1-1/2 pounds (3 cups)	Fat		
About 1-1/4 quarts	Water		

Portion: 1 2-inch biscuit.

Total cost \_\_\_\_\_

Cost per portion \_\_\_\_\_

1. Stir dry ingredients together and sift. (Or blend 15 minutes in mixer on low speed, using the whip.)
2. Cut or rub in fat to consistency of coarse corn meal.
3. Add enough water to make a soft dough.
4. Turn dough out on a lightly floured board, divide into halves, and knead lightly about 1 minute.
5. Roll out to 1/2-inch thickness and cut with a floured 2-inch cutter, or roll out in sheet and cut into 2-inch squares. Place on ungreased baking sheets.
6. Bake in a hot oven (425° F.) 12 to 15 minutes.

BUREAU OF HUMAN NUTRITION AND HOME ECONOMICS





SOY CORN BREAD (With Nonfat Dry Milk and Dried Whole Egg)

Breads

100 portions	Ingredients	portions	Cost
2-3/4 pounds (2-3/4 quarts)	Sifted enriched flour		
2-1/2 pounds (7-1/2 cups)	Corn meal		
6 ounces (2-2/3 cups)	Sifted full-fat soy flour		
12 ounces (3 cups)	Nonfat dry milk		
10 ounces (1-1/4 cups)	Sugar		
6 ounces (1-1/2 cups firm-packed)	Dried whole egg		
6 ounces (1 cup)	Baking powder		
2 ounces (1/4 cup)	Salt		
About 3 quarts	Water		
1 pound (2 cups)	Fat, melted (or oil)		

Portion: 1 piece, about 2-1/2 by 3 inches. Total cost \_\_\_\_\_

Cost per portion \_\_\_\_\_  
BUREAU OF HUMAN NUTRITION AND HOME ECONOMICS

1. Stir dry ingredients together and sift. (Or blend all dry ingredients 15 minutes in mixer on low speed, using the whip.)
2. Add half of the water and the fat to dry ingredients. Mix until batter is smooth. Gradually add remaining water and mix well.
3. Pour into four well-greased baking pans (12 by 16 inches) or two well-greased bun pans (16 by 24 inches).
4. Bake in hot oven (425° F.) about 30 minutes.

SPOON BREAD (With Nonfat Dry Milk)

Breads

100 portions	Ingredients	portions	Cost
1-3/4 pounds (1-3/4 quarts)	Nonfat dry milk		
2 quarts	Lukewarm water		
3 pounds (2-1/4 quarts)	Corn meal		
3 ounces (1/3 cup)	Salt		
5 quarts	Water for corn meal		
12 ounces (1-1/2 cups)	Fat		
34	Eggs, beaten*		
2 tablespoons	Sugar		
1-1/2 ounces (1/4 cup)	Baking powder		

Portion: 1/3 cup. Total cost \_\_\_\_\_  
Provides: 1/3 egg. Cost per portion \_\_\_\_\_

BUREAU OF HUMAN NUTRITION AND HOME ECONOMICS

1. Sprinkle dry milk over the lukewarm water and beat until smooth.
  2. Stir corn meal and salt into water. Cook until thick. Add fat. Remove from heat and cool slightly.
  3. Blend reconstituted milk, eggs, and sugar. Beat into corn meal mixture.
  4. Stir in baking powder.
  5. Pour into four greased baking pans (12 by 16 inches).
  6. Bake in moderate oven (350° F.) for 40 to 45 minutes.
- \*1-1/8 pounds (4-1/2 cups firm-packed) dried whole egg and 5-2/3 cups water beaten together may be used in place of shell eggs.

